



X-Plain™

Hypertension

Reference Summary

Hypertension, or high blood pressure, is a very common condition that affects 1 out of 4 adults. Hypertension is also called the silent killer because it often has no symptoms and can cause serious diseases if it goes untreated for a long time. This reference summary explains hypertension and how it can be prevented and controlled.

Blood Pressure

The cells of the body need oxygen and food to survive.

Oxygen and nutrients are carried to all parts of the body through the blood. The heart pumps blood out of its chambers through blood vessels. The blood vessels that carry fresh blood from the heart to the body are called “arteries.”

Blood pressure is the force of blood as it presses against the walls of the arteries, like the pressure of water in a garden hose.

Two numbers are used to describe blood pressure.

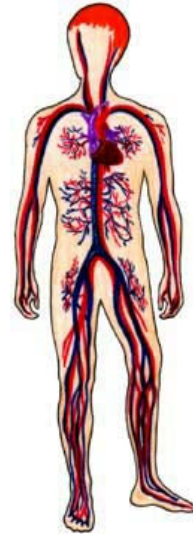
The top number, called “systolic blood pressure,” measures blood pressure when the heart pumps.

A normal, healthy top number is less than 120.

The second number is lower than the systolic pressure and measures blood pressure when the heart rests. It is known as “diastolic blood pressure.”

A normal, healthy bottom blood pressure number is 80 or below.

For example, a patient may have a blood pressure of 125/70, typically pronounced “one twenty-five over seventy.” This means that the patient has a reading of 125 systolic and 70 diastolic blood pressure.



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Hypertension

Blood pressure varies all the time. It is common for it to differ by 10 to 20 units when it is measured at different times, even minutes apart.

For instance, exercise or emotional stress can increase the blood pressure. The increased blood pressure allows more blood to be pumped to the body to help the body cope with increased activity or stress. The body can tolerate such a temporary rise in blood pressure. Because of these normal variations, doctors do not diagnose a patient with high blood pressure unless repeated measurements show it to be consistently high.

If the top blood pressure number (systolic) is consistently equal to or higher than 140 or if the bottom blood pressure number (diastolic) is consistently equal to or higher than 90, then the doctor will diagnose a patient as having high blood pressure, or hypertension.

Recently, the guidelines for diagnosing hypertension have changed. A systolic blood pressure between 120 and 140 and/or a diastolic blood pressure between 80 and 90 is now considered to be pre-hypertension. Meaning that these patients have a higher chance of developing hypertension.

It has also been found that patients with pre-hypertension are at a higher risk of dying from heart attacks. Patients with pre-hypertension therefore need to bring their blood pressure below 120/80.

Causes Of Hypertension

The exact causes of hypertension are not known. However, certain factors are associated with high blood pressure. People who smoke, are overweight, eat salt and fat regularly, drink excessively, are stressed, or are not physically active are at a higher risk of developing high blood pressure.

People who have a high level of cholesterol or have heart or kidney disease, as well as people who have had a stroke, are at a higher risk of developing hypertension.

Though some people are at a higher risk of developing hypertension, anyone at any age and background can develop high blood pressure. People who have a history of hypertension in the family or are African-American are more likely to have hypertension.

Complications Of Hypertension

Over time, high blood pressure can damage blood vessels all over the body. It can cause blood vessels to widen and become weaker. This can lead to abnormal widening of the blood vessels,

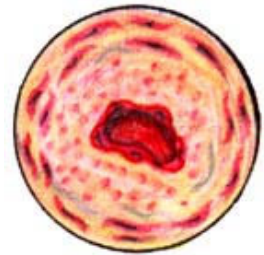
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which is called an “aneurysm.” Aneurysms can bleed and cause death, especially when they are located in the blood vessels of the brain or the aorta, the biggest blood vessel in the abdomen.

Over time, other blood vessels become narrower from the accumulation of cholesterol and other debris on the inside. The thickening of the muscles of the arteries from high blood pressure can also cause this narrowing.

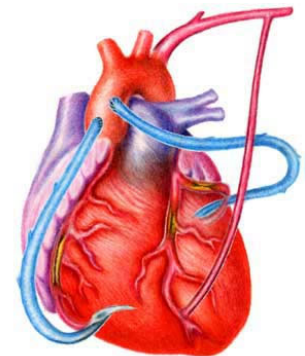
Narrow blood vessels restrict and may even block the flow of blood. When blood flow stops, the organs supplied by these blood vessels can be damaged or can die.

The blockage of arteries in the brain can lead to a stroke. Strokes can lead to paralysis, speech problems, and even death. Blockage of blood vessels in the kidneys can lead to kidney failure, the inability of the kidney to remove poisons from the blood. This will lead to death unless patients are hooked up to a special machine 3 to 5 times a week, for four hours at a time, to clean their blood. This is known as dialysis.



Blockage of blood vessels in the eye can lead to impaired vision and even blindness. In the heart, such blockage leads to a heart attack, where the part of the heart that was supplied by the blocked artery dies. This weakens the heart and may even lead to death.

The heart can also be affected in another way. It can get tired from pumping blood at such a high pressure. This is known as heart failure and can also result in breathing problems and death.



Most of these risks of high blood pressure are more severe if the patient has other medical conditions such as diabetes, obesity, high cholesterol, or previous strokes or heart attacks.

Diagnosing Hypertension

Damage to blood vessels may take years to develop. During that time, patients suffering from hypertension, the silent killer, may have NO symptoms.

Even though patients feel no symptoms in most cases when the blood pressure rises abnormally, a minority of patients with hypertension suffer from headaches or extreme fatigue.

The only way to detect hypertension early enough to prevent its serious complications is by checking the blood pressure regularly. A physician, a nurse, or any other healthcare provider can help check for hypertension. The test takes a couple of minutes and is painless. Nowadays

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machines can automatically check a patient's blood pressure. However, only a physician can diagnose hypertension.

When blood pressure remains high after several tests taken on different days, the doctor diagnoses hypertension.

The doctor orders diagnostic tests and takes a medical history and physical exam to determine if hypertension has affected the general health of the patient. He or she will then recommend a treatment plan.



Controlling Hypertension

Unfortunately, hypertension has no cure. It can be controlled, however. Controlling hypertension means a lifelong commitment to changing some eating and lifestyle habits. Medications may also be necessary to bring high blood pressure back to normal.

Following up regularly with the doctor is also essential to ensure that hypertension is controlled and is not causing serious diseases. Losing weight and exercising, accompanied by some diet changes, are frequently all that is needed to bring blood pressure back to normal.

Diet changes include eating less table salt and less fat. The words *salt*, *sodium*, and *Na* on food labels all mean salt. Your body needs only 3,000 milligrams or 3 grams, of sodium per day. Products containing baking soda, baking powder, and soy sauce usually have high levels of sodium. Canned food also has a high amount of salt.

Although most people like the taste of salt in their foods, cooking with little or no salt can also be very tasty. Salt substitutes and different spices are available to give dishes a good taste.

Eating less fat not only helps people lose weight and keep blood pressure normal, but it also helps prevent heart attacks and strokes not related to hypertension.

Aerobic exercise helps people reduce blood pressure, as well as lose weight. It also helps improve heart performance and decreases the chances of heart attacks. Walking, bicycling, and swimming are all examples of aerobic exercise. However, muscle building is not an aerobic exercise. Check with your doctor before you begin an exercise program. Muscle building may increase blood pressure.

When healthy eating and exercising do not help control blood pressure adequately, the doctor may prescribe medications. Some of these medications may have unpleasant side effects. If you have unpleasant side effects, rather than getting discouraged and stopping the medication

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on your own, consult with your physician. He or she is usually able to change your medication or adjust your dosage to decrease the incidence of side effects.

Hypertension medications are often taken for long periods, sometimes for life. Regular checkups with the doctor are essential to determine the effectiveness of the medications.

Summary

Hypertension is a disease that causes serious and fatal complications. However, early detection and aggressive control has helped millions of people live healthy and long lives.

The patient's help and persistence are essential to control hypertension.

Your healthcare provider may have additional resources to help you take the necessary steps for preventing and controlling hypertension.

With the help of your healthcare provider, you can give yourself the best chances for a long and healthy life.